

## Claims

- [1] A voltage supplying device comprising: a pair of voltage lines, said voltage lines adjacent to each other; and a controlling means for supplying one of said pair of voltage lines with a voltage during a transition from a state in which a supply of a voltage to the other of said pair of voltage lines is blocked to a state in which said other of said pair of voltage lines is supplied with a voltage.
- [2] A voltage supplying device as claimed in claim 1, wherein said controlling means blocks the supply of the voltage to said one of said pair of voltage lines after said transition.
- [3] A voltage supplying device comprising:  
a first relaying line;  
a second relaying line;  
a first voltage line supplied with a voltage through said first relaying line;  
a second voltage line supplied with a voltage through said second relaying line;  
a third voltage line supplied with a voltage through said first relaying line, said third voltage line adjacent to said second voltage line; and  
a controlling means for continuing to supply said second voltage line with a voltage during a transition from a first voltage supplying state in which said first voltage line is supplied with a voltage to a second voltage supplying state in which said third voltage line is supplied with a voltage.
- [4] A voltage supplying device as claimed in claim 3, wherein said controlling means supplies said first relaying line with a voltage for said third voltage line after supplying said first relaying line with a voltage for said first voltage line, and wherein said controlling means continues to supply said second relaying line with a voltage for said second voltage line during a transition from a state in which said first relaying line is supplied with said voltage for said first voltage line to a state in which said first relaying line is supplied with said voltage for said third voltage line.
- [5] A voltage supplying device as claimed in claim 4, wherein said controlling means is adapted to switch from a disconnection state in which said third voltage line is disconnected from said first relaying line to a connection state in which said third voltage line is connected to said first relaying line, and wherein said controlling means continues to supply said second voltage line with said voltage for said second voltage line through said second relaying line during a transition from a disconnection state in which said third voltage line is disconnected from said first relaying line to a connection state in which said third voltage line is connected to said first relaying line.
- [6] A voltage supplying device as claimed in claim 5,

wherein said controlling means is further adapted to switch from a disconnection state in which said second voltage line is disconnected from said second relaying line to a connection state in which said second voltage line is connected to said second relaying line,

and wherein said controlling means continues to keep a connection state in which said second voltage line is connected to said second relaying line during a transition from a disconnection state in which said third voltage line is disconnected from said first relaying line to a connection state in which said third voltage line is connected to said first relaying line.

[7]

A voltage supplying device as claimed in claim 6,

wherein said controlling means comprises:

a first switching means for making a connection state in which said first voltage line is connected to said first relaying line and a disconnection state in which said first voltage line is disconnected from said first relaying line;

a second switching means for making a connection state in which said second voltage line is connected to said second relaying line and a disconnection state in which said second voltage line is disconnected from said second relaying line;

and

a third switching means for making a connection state in which said third voltage line is connected to said first relaying line and a disconnection state in which said third voltage line is disconnected from said first relaying line,

and wherein said controlling means comprises a switch controlling means for controlling said first, second, and third switching means in such a way that a connection state in which said second voltage line is connected to said second relaying line is kept during a transition from a first state in which said first voltage line is connected to said first relaying line and said third voltage line is disconnected from said first relaying line to a second state in which said first voltage line is disconnected from said first relaying line and said third voltage line is connected to said first relaying line.

[8]

A voltage supplying device as claimed in claim 7,

wherein said first switching means connects said first voltage line to said first relaying line in its on state and disconnects said first voltage line from said first relaying line in its off state,

wherein said second switching means connects said second voltage line to said second relaying line in its on state and disconnects said second voltage line from said second relaying line in its off state,

wherein said third switching means connects said third voltage line to said first relaying line in its on state and disconnects said third voltage line from said first relaying line in its off state,

and wherein said switch controlling means controls said first, second, and third

switching means in such a way that said second switching means keeps on state during a transition of said first switching means from on state to off state and a transition of said third switching means from off state to on state.

- [9] A voltage supplying device as claimed in claim 8,  
wherein said switch controlling means outputs a first control signal for controlling said first switching means, a second control signal for controlling said second switching means, and a third control signal for controlling said third switching means,  
wherein said first control signal has an first on-voltage for turning said first switching means to an on-state and an first off-voltage for turning said first switching means to an off-state,  
wherein said second control signal has an second on-voltage for turning said second switching means to an on-state and an second off-voltage for turning said second switching means to an off-state,  
wherein said third control signal has an third on-voltage for turning said third switching means to an on-state and an third off-voltage for turning said third switching means to an off-state,  
wherein said switch controlling means outputs said first and third control signals in such a way that a transition of said third control signal from said third off-voltage to said third on-voltage is made when a transition of said first control signal from said first on-voltage to said first off-voltage is made,  
and wherein said switch controlling means outputs said second control signals in such a way that said second control signal has said second on-voltage during a transition of said third control signal from said third off-voltage to said third on-voltage.
- [10] A voltage supplying device as claimed in claim 9,  
wherein said switch controlling means comprises an OR circuit for implementing the logic sum of said first control signal and said third control signal to output a signal representing said logic sum of said first and second control signals as said second control signal.
- [11] A voltage supplying device as claimed in claim 9,  
wherein said switch controlling means comprises an delay circuit for delaying said first control signal to output said delayed first control signal as said second control signal.
- [12] A voltage supplying device as claimed in any one of claims 3 to 10,  
wherein said supplying device comprises:  
an additional relaying line;  
a first voltage line group having said first voltage line and said second voltage line; and  
a second voltage line group having said third voltage line and a fourth voltage

- line supplied with a voltage through said additional relaying line.
- [13] A voltage supplying device as claimed in claim 12,  
wherein said supplying device comprises a fifth voltage line supplied with a voltage through said first relaying line, said fifth voltage line adjacent to said fourth voltage line,  
and wherein said controlling means continues to supply said fourth relaying line with a voltage through said additional relaying line during a transition from a state in which said third voltage line is supplied with a voltage through said first relaying line to a state in which said fifth voltage line is supplied with a voltage through said first relaying line.
- [14] A voltage supplying device as claimed in any one of claims 3 to 13,  
wherein said controlling means blocks the supply of the voltage to said second voltage line after said transition from said first voltage supplying state to said second voltage supplying state.
- [15] A voltage supplying device comprising: a first relaying line;  
a second relaying line;  
a first voltage line supplied with a voltage through said first relaying line;  
a second voltage line supplied with a voltage through said second relaying line;  
a third voltage line supplied with a voltage through said first relaying line, said third voltage line adjacent to said second voltage line; and  
a controlling means for switching from a first voltage supplying state in which said first voltage line is supplied with a voltage to a second voltage supplying state in which said third voltage line is supplied with a voltage during supply of a voltage to said second voltage line.